Queens
HEALTH NETWORK

Written Testimony

of

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Mr. Chairman and members of the Committee, I would like to thank you for this opportunity to share the experience of a public hospital system in New York City in transforming healthcare with technology.

I am Associate Executive Director for Healthcare Information Systems at the Queens Health Network in Queens, New York. A member of the New York City Health and Hospitals Corporation (HHC) and an affiliate of the Mount Sinai School of Medicine, the Queens Health Network is the major healthcare provider in the borough of Queens, New York City, employing over 6,000 people.

Queens Health Network and the Community We Serve
Serving a population of 2 million, Queens Health Network (QHN) comprises Elmhurst Hospital Center, Queens Hospital Center, 14 free standing medical clinics and six school-based health centers. Elmhurst and Queens are teaching hospitals, with a combined total of 771 inpatient beds and 43,000 annual hospital admissions. Rotating residents are supervised by attending physicians with faculty appointments. Together, these 800 physicians provide more than 1 million ambulatory care visits each year. QHN also provides 45,000 home healthcare visits annually, and has contracts with hospice organizations whose services include palliative care at Elmhurst.

Queens County in New York City is one of the most ethnically diverse regions in the world, populated by residents who represent more than 100 nationalities and speak more than 167 languages. The residents served by the Queens Health Network are also some of the borough's poorest. A large percentage have median family incomes less than the county's $34,186, with many more earning below the 2004 Department of Health and Human Services poverty guideline of $18,850 for a family of four**.**

No region has been more affected by the wave of immigration into the United States than that served by QHN. Minority populations comprise more than 87% of the patient population served by the Queens Health Network. The service catchment area also has a rate of linguistically isolated households higher than the 11% rate of Queens County as a whole.

These newly arrived immigrants avail themselves of the public hospital system in New York City. The Health and Hospitals Corporation (HHC) is one of the largest municipal health systems in the country. They form a medically underserved population, denied care in many venues because of their inability to pay and generally unaware of preventive practices that promote improved health. Patients come to Elmhurst and Queens Hospitals with more advanced disease processes, complications and co-morbidities than the general population because they often seek care later and may not know where care is provided. Language and cultural barriers present an additional challenge to providing high-quality care in a vital, growing community in a high-volume, inner city healthcare system.

Transforming Patient Care with Technology

In the mid-nineties, the Queens Health Network faced a dilemma: how to maintain and expand services for an ever-increasing number of uninsured patients, in an ever more demanding marketplace. The consolidation of operations and regionalization of services compelled the sharing of patient data throughout a multi-hospital system. The logistics of the exchange of patient records among numerous patient care locations seemed insurmountable, especially when viewed in the light of the problems inherent in providing paper charts to existing locations.

Additionally, emerging population-based "disease management" efforts by health systems directed at major chronic illnesses had increased the emphasis on safe, efficient and cost effective means to enhance patient care and measure outcomes.

In the spring of 1996, implementation of an integrated electronic health record (EHR) was proposed by senior administration to the medical staff as an integral component of the Queens Health Network's strategic and business plans. Design and implementation of an EHR was viewed as essential to the development of an effective infrastructure from which to support the reorganization of care, the design and refinement of quality measures and reporting process, and the practice of evidence-based medicine to improve management of chronic disease.

Quality care for patients across a variety of settings, the locus of which is no longer the inpatient hospital, required ever more rapid retrieval of longitudinal, integrated patient information at the point of service. The decision was made to begin EHR implementation in the ambulatory care setting, then proceed through conversion of diverse legacy computer systems, and on to the hospital inpatient setting.

From Paper to CPOE in Six Months

Computerized physician order entry (CPOE) became a reality in the Queens Health Network in January 1997. Today, doctors throughout ambulatory care document 3,000 patient encounters online every day, and inpatient physicians and emergency room doctors place orders and review results for thousands more. Physicians, nurses, social workers, nutritionists and other patient care providers enter and retrieve data (test and consult orders, assessments, progress notes, history and physical examinations, medication orders, patient/ family education) in the EHR at nearly 3,000 personal computers located in exam rooms, ancillary departments and on inpatient units across the Queens Health Network. Pharmacists verify medication orders online. With the exception of mammography at Queens Hospital, QHN is filmless; radiologists dictate their findings using a voice recognition system, approve reports electronically, and images are stored on and retrieved from a digital imaging system.

The EHR enables real-time access to patient information anywhere in the network. Consider a patient referred from one of the School Based Health Programs to Elmhurst Hospital for a head MRI. The radiologist now can review prior visit history and diagnoses, results of general diagnostic radiography and CT scans, BUN, Creatine and other recent lab values, and ensure that the patient does not have a contrast allergy before

the technologist performs the test. That the patient was seen at another facility in the network is not an impediment to accessing vital information. Availability of clinical information online surmounts one of the biggest obstacles to integrated, seamless care across the entire spectrum of healthcare services. The Queens Health Network (QHN) EHR positions the organization to provide patient care that is safe, effective, timely and efficient.

This integrated, interdisciplinary electronic patient record, located at the point of care, used by physicians and other clinicians to enter and retrieve patient data provides a strong patient information infrastructure. The technology ensures that the Queens Health Network is well-positioned to re-engineer care processes, coordinate patient care across the continuum of time and location, sustain multidisciplinary team functioning, and facilitate performance and outcomes measurement necessary to improve health care quality.

How Do We Measure Success?

The electronic health record has improved the quality of care provided by the Queens Health Network, especially with regard to:

§ Patient safety, as computerized physician order entry eliminates transcription errors made by caregivers who serve as intermediaries between the physician and the patient; legibility of prescriptions, progress notes, care plans, assessments is improved; and medication errors can be reduced through use of computerized alerts regarding dosing, allergies, and adverse drug reactions.

§ Efficiency of care can be improved by reducing redundant laboratory and other testing, improving multidisciplinary communication by integrating patient assessments, and making all patient information immediately accessible at the point of care.

§ Effectiveness of care may be enhanced through use of automated decision support features, such as electronic reminders of health maintenance testing and immunizations, displays of certain test results and measurements trended over time, and automatic notification of a patient's condition to providers at other care venues.

§ Timeliness of patient information is improved by providing real time availability of clinical information, diagnostic tests and treatment results across the continuum of care.

Improving Healthcare in the 21st Century

Chronic disease is the leading cause of illness, disability and death in the United States today. Nearly half of the US population, or 100 million Americans, have one or more chronic medical conditions. The cost of treatment is enormous, accounting for nearly 70% of all personal healthcare expenditures in the United States.

Evidence based care processes, supported by automated clinical information and decision support, offer the greatest promise of achieving the best outcomes from care for chronic conditions. The treatment of chronic disease is different from episodic, because:

§ Patient care crosses all care venues: from home, to physician's office, to hospital, to nursing home, and back.

§ Treatment of chronic disease is longitudinal; it may span decades.

§ Effective care is collaborative and multidisciplinary.

§ Communication is essential: personal health information must accompany patients as they transition across time and the continuum of care.

The EHR allows the capture of enormous amounts of data in ways that paper records never could. Caregivers working in adjoining offices in the Cardiology Clinic, for instance, may not realize what is going on with each other's patients with the same diagnosis of congestive heart failure. Put the data together, however, and patterns may emerge. Real-time data regarding individual patients and groups of patients with chronic conditions can now be aggregated and analyzed to develop population-based approaches to disease management.

QHN has developed disease registries for patients with diabetes in an effort to facilitate access to information about the performance and results of certain elements of care. Across our healthcare system, we can determine how many patients are receiving follow up care for their diabetes, and how well they are maintaining their Hemoglobin A1C levels below the target range of <6.5%. Patients with congestive heart failure and depression have also been targeted as populations whose outcomes can be improved by studying them as parts of groups, allowing our clinicians to discern subpopulations and/ or patterns of care that can be improved.

The EHR is providing clinicians with a structure for sharing best practices and the tools to improve patient health. A pilot program in Medical Primary Care, which presently includes 10,000 patients, is providing a link to simplify communication between patients and caregivers outside our Network. Named the QHN Health Connection, it includes a credit card-sized "smart card" on which a summary of the patient's clinical information is recorded and updated at the end of each encounter. Patient problems/ diagnoses, medications, allergies and recent lab results are captured on the card.

With installations of card readers in other hospitals in the borough of Queens, the Health Connection Card is providing a tool to share patient information, improve the safety and efficiency of care, and providing a foundation for QHN to work with other healthcare providers to build a regional health information organization.

Conclusion
The experience of the Queens Health Network, a public hospital system in New York City, demonstrates that:

§ Electronic health records improve efficiency and effectiveness of care, and patient safety.

§ Electronic health records provide the structure to improve outcomes and effectively manage chronic disease in patient populations.

§ Electronic health records provide the structure for sharing clinical information across care venues and improving the health of our communities.

In an era of cost constraints and performance expectations imposed by purchasers, regulators and an increasingly informed public, the challenges of providing safe, high quality patient care are formidable. The question is not how can we afford to implement electronic health records. The question is how can we afford not to?